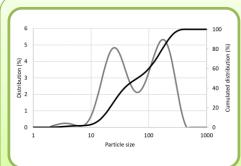
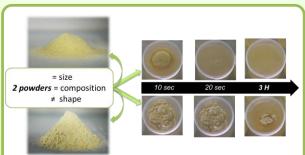
## Characterization of powder ingredients









## Market Issues:

Flour, protein concentrates, protein isolates, starchy by-products, fiber by products, new protein sources are new ingredients often distributed as powders.

Ingredient specifications, often reduced to chemical composition, microbiological analysis and a particle size are not detailed enough to fully evaluate ingredient applicative value. Indeed, their quality is also evaluated by the market according to their performances: Is the ingredient fine enough? Is it volatile? Is it sticky? Is it dispersible? What is it's aspect? What is it's density? ...

Each of these properties is related to the particles contained within the ingredients through their size, porosity, shapes... and the process behind these particles. Monitoring these properties for a given ingredient is necessary for product understanding, comparison and improvement.

IMPROVE proposes a wide scope of routine analysis to support you in those topics from benchmark to process optimization.

## Services offer:

- ✓ Particle size distribution → sieving, laser diffraction in dry and wet mode, Image analysis
- ✓ Particle shape distribution → image analysis
- ✓ **Color** → chromameter
- ✓ Bed and particle density → tapped and aerated density, pycnometry
- ✓ **Properties in dry application** → dispersibility in air, agglomeration, Hausner index, Falling angle, pelletizing,
- ✓ Properties in wet application →
  dispersibility in water, agglomeration,
  water holding capacity, oil holding
  capacity, solubility, sedimentation

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